

Therapeutic Donor Insemination

A Review of 440 Cases

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THERAPEUTIC DONOR INSEMINATION has been practiced in the United States for a relatively short time, although the initial attempt was first made in 1886. The practice is rapidly increasing and being accepted as a therapeutic measure by a larger portion of the population each year.

In approximately one marriage in six (17 per cent) the couple is involuntarily childless, and in these marriages about 10 per cent of the husbands are either absolutely sterile or so nearly so that treatment is hopeless.

The causes of male sterility are numerous—complications arising from venereal disease, glandular dysfunction undiscovered and untreated until puberty, intercurrent infections such as mumps orchitis and tuberculosis, malignant disease, overexposure to x-ray, undescended testicles, untoward results of surgical operation (repair of hernia) and trauma.

The term, *therapeutic donor insemination* was suggested by Dr. Kleegman rather than *artificial insemination* because of the association of the latter term with animal husbandry. The former is in reality the insemination of humans for the cure of sterility. Among the reasons for insemination are azoospermia, severe oligozoospermia, unfavorable congenital qualities, Rh incompatibility and impotency.

Extreme care must be exercised in the choosing of the couples for insemination. The couple must be emotionally stable, must recognize the psychological, emotional and legal consequences that may ensue and also recognize that this is a mutual problem—one that they must face for the remainder of their lives. It is stressed that the potential child should be given the most consideration in this method of reproduction.

For this reason, the couple must live up to certain standards. They must be good "parent material," and not merely seeking a way to "save their marriage."

The entire process must be explained to the couple—the manner in which the donor is selected, his fertility, familial history, physical and mental alertness, the matching of his racial, physical, emotional and blood factors with the corresponding factors in the husband and wife, the anonymity of

• Of 399 patients inseminated therapeutically with the semen of a donor, 303 became pregnant, the great majority of them within six months of the time inseminations were begun. The average number of inseminations was 6.2 and the average number of menstrual cycles over which they were carried out was 3.55. The greatest number of pregnancies occurred between the twelfth and the fifteenth day of the menstrual cycle.

Seven patients had four pregnancies by this method, 17 had three and 59 had two.

Emotional problems related to children of artificial insemination were far fewer than those associated with adoption.

the donor, the legal status of the child, the manner in which the records are kept in the office, the usual time interval before pregnancy occurs and the probable cost involved.

After it has been determined that the husband is sterile and the mental and psychological make-up of the couple studied carefully by the physician, there should be a "cooling off" period of one to several months before a final decision is made. At no time should the physician "push" or try to "sell" the method to the couple.

If there is doubt in the physician's mind, insemination should not be started or it should be discontinued if this doubt arises later. There are numerous ways in which the physician can postpone or stop the procedure. If any hesitancy develops, the physician can inform the couple that a minor infection has arisen or that a suitable donor is not available, and thereupon discontinue insemination.

After complete explanation, the "cooling off" period having passed and the physician reassured of the stability of the couple and their marriage, a consent is signed by both husband and wife before a witness (the physician's secretary or nurse may serve) and plans laid for insemination.

During this interval, the wife has been studied to be sure that she is capable of carrying a pregnancy safely, that her tubes are open and normal and that ovulation occurs in a majority of her menstrual cycles.

Insemination is usually performed one to three times per month, the timing being based on past menstrual records, on basal body temperature readings and on the character of the cervical mucus.

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METHOD

The method of insemination is simple. The patient is placed in lithotomy position on the examining table and the vagina and cervix are wiped dry with cotton. The cervical mucus is studied for signs of ovulation, and the amount and character of the mucus is observed—for the presence or absence of pus, for Spinbarkeit, fern formation and presence of glucose. Occasionally a study of vaginal smears is done if the patient's periods are too irregular.

Semen from the donor is placed in a plastic cup* (first used by Whitelaw)⁹ and inserted into the vagina and over the cervix, where suction holds it in place. Care must be taken that none of the semen is spilled during the insertion. The cup is slipped along the posterior wall of the vagina in a horizontal position, dome down, until the cervix is reached, when a slight downward pressure permits the cup to slip over the cervix. In this manner, the cervix is constantly bathed in the entire undiluted specimen of semen, which is left in place for 24 to 48 hours and then removed either by the physician or the patient. If the cup is removed in the office, examination of the cervical mucus usually will reveal myriads of active sperm (if the insemination was performed at the time of ovulation) even though 48 hours have elapsed since the insertion of the cup. No preservative or antibiotic such as penicillin is added. Ovulation is considered to occur between the low point of the basal temperature and the beginning of the first sustained rise which follows.

RESULTS

The present series included 440 women, 41 of whom were still under treatment at the time of this report. Of the remaining 399 patients, 303 became pregnant (75.94 per cent) and 216 delivered 220 normal live infants. There were 67 miscarriages (22.11 per cent), which was somewhat higher than the proportion of spontaneous miscarriages reported by Malpes (18 per cent),⁷ Mall (20 per cent),⁶ Whitehouse (17.6 per cent),⁸ Brunner and Newton (15.8 per cent),¹ Cary (10.6 per cent)² and Kleegman (20.2 per cent).⁵ Twenty patients were still pregnant at the time of report, two were lost track of and 96 (24 per cent) patients terminated treatment for one reason or another.

In the 303 cases in which pregnancy occurred, the total number of inseminations performed on the day of ovulation was 700, or 43.2 pregnancies per 100 inseminations. This compares with my previous report³ of conception in 23.7 per cent of inseminations on the day of ovulation. The improvement is

*Manufactured by Ortho Research Foundation and Milex-Fertilex Co.

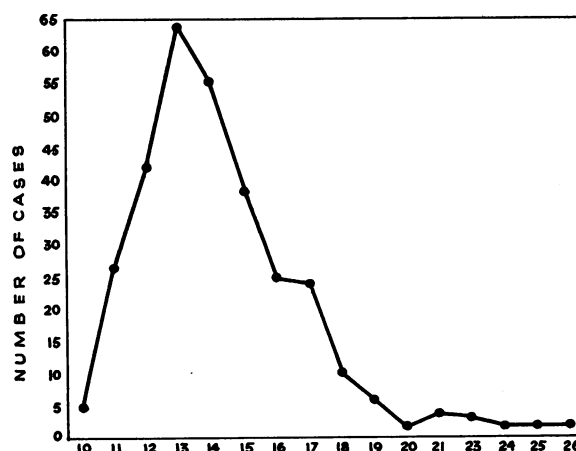


Chart 1.—The numerals across the chart designate the day of the menstrual cycle on which fruitful insemination was done.

probably due to improved methods of detecting ovulation, which may cast some light on why conception often does not occur from the copulation of normal fertile couples at what they believe is the time of ovulation.

In this series the average number of inseminations per pregnancy was 6.2, and the average number of menstrual cycles that took place before pregnancy was obtained was 3.55. Pregnancy followed insemination in a single cycle in 91 cases (30.1 per cent), in two cycles in 53 cases (17.5 per cent) and in the third cycle in 55 cases (18.21 per cent). Thus 65.67 per cent of the women became pregnant in the first three cycles of insemination. Another 66 women became pregnant in the next three cycles, a total of 265 (87.4 per cent) achieving their goal within a six month period.

Of the 220 children born, 117 (53.6 per cent) were male, 101 (46.3 per cent) were female and the sex of two is unknown. There were four sets of twins (one set of identical males, one set of identical females and two sets of mixed sex). There were only five abnormalities among the children: One had a minimal hairlip, one was jaundiced, one was born with a malformation of the hand and two with hemangiomic birthmarks (both of these being of the same mother and the same donor).

Fruitful inseminations varied from the 10th to the 26th day of the cycle, with the great majority (65.31 per cent) occurring between days 12 and 15 (Chart 1).

A total of 95 donors were used—some only once or twice, others more frequently. Semen from 40 of them did not impregnate any of the potentially fertile women in the series, even though all donors were considered to be normal fertile males by present standards.

DISCUSSION

The possibility of a donor's children meeting and marrying has been frequently mentioned. In this regard it may be noted that in the present series only 57 per cent of the pregnancies occurred in patients who lived within a radius of 50 miles of San Francisco, an area having a population of approximately three million people; and the remainder were scattered over a wide area. Hence the chances of unwitting incest would seem very remote.

There have been no complications related to the insemination technique since the use of the plastic cup was begun in 1948. Previously, when the semen was placed in the vagina or into the cervical canal, there were five cases of complications—acute pelvic inflammatory disease or transient endometritis.

Not all the 96 cases in which conception did not occur should be counted as failures. Twelve patients became discouraged after one cycle, 15 after two cycles and another 15 after three cycles—making a total of 42 (43.6 per cent) who stopped at or before the third month. It is probable that if these patients had continued, a large majority would have become pregnant. Another 25 stopped in the next three months. Only four patients continued inseminations longer than a year. The reasons given for termination of treatment included moving to another locality, adoption of a child, religious canons, financial straits, discouragement, divorce and emotional factors.

PARENTAL ATTITUDE

Follow-up information of some kind was obtained on 216 patients who were delivered of full term babies. These follow-ups consisted of letters from the patients, Christmas cards and pictures of the parents and children, office visits where the children were "shown off" or visits to plan for future inseminations. Letters that arrive from time to time are full of appreciation, pride and joy in the child or children, some of whom are now 13 years old.

Seven patients have had four pregnancies by donor insemination, 17 have had three and 59 have had two. From the survey of the follow-up data plus the fact that 83 women have returned for additional inseminations, there is good evidence that therapeutic insemination has been readily accepted and psychologically successful. The child is a child of the family, not alone of the wife. Emotional problems so often associated with adoption have been few. The husband identifies the children as part of his wife and gives them parental love and affection. In fact, it is usually the husband who first broaches the subject of more children by this method. Of

the couples who remained in the author's ken, only three are known to have had marital difficulties in the ensuing years, none of them directly influenced by the inseminations.

LEGAL NOTES

No state, province or federal government has any law directed toward the regulation of therapeutic donor insemination. There have been few court cases regarding the legality of the procedure—whether there is any criminal culpability on the part of the physician, the wife or the donor, the legitimacy of the child or the questions of inheritance, custody, support and education of the offspring.⁴

Seven cases dealing with donor insemination have come to trial—one Canadian, two English and four American. The foreign cases have no direct bearing on therapeutic insemination. In the first American case (*Hoch vs. Hoch*)* the court stated that artificial insemination with the semen of a donor is not adultery. In the case of *Strnad vs. Strnad*,* the court said that "assuming again that the plaintiff was artificially inseminated with the consent of the defendant, this child is not an illegitimate child." In the case of *Ohlson vs. Ohlson*,† the ruling was that "when a child is born within a marriage, by whatever method, there is legal presumption that both marriage partners are its parents." In still another decision (*Doornbos vs. Doornbos**) however, the court ruled that artificial insemination with donor semen constituted adultery on the part of the mother and that the child was illegitimate. All the foregoing decisions were rendered by lower courts, hence were simply one trial judge's opinion and not firmly established as precedent.

Many of the problems that have been discussed at various times are disposed of by statutes which cover this subject quite adequately even though never intended to apply to donor insemination. Rather summary disposition can be given to the questions of both civil and criminal adultery, failure to support the child and the legitimacy and inheritance of a child who comes under the indisputable presumption of Section 1912 of the California Code of Civil Procedure. In fact, if the husband is not impotent and is cohabiting with his wife, it is difficult to find a problem not settled by this indisputable presumption.

Bills legitimatizing the children conceived by therapeutic insemination and giving them the right of inheritance, maintenance and support have been introduced into several state legislatures, but as yet

*58 Yale Law Rev., 457-460, 1949. Case *Strnad vs. Strnad*, 78 N. Y. Supplement 2nd, page 390, 190 Misc., 786 (Sup. Ct. N.Y., 1948). Case *Doornbos vs. Doornbos*, 111 Sup. Ct. No. 54 S, 14981.

†Cited in J.A.M.A., Medicine and the law, April 1955.

none has passed. There should be a well organized campaign for the dissemination of correct information as to the benefits of the treatment, for the respectful avoidance of practices contrary to religious tenets and for intellectual and dignified countering of sensationalistic discussions of the subject.

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REFERENCES

1. Brunner, E. K., and Newton, L.: Abortions in relation to viable births in 10,609 pregnancies, *Am. J. Obst. & Gyn.*, 38:82, 1939.
2. Cary, W. H.: Results of artificial insemination with an extramarital specimen (semi-adoption), *Am. J. Obst. & Gyn.*, 56:727-732, 1948.
3. Haman, J. O.: Results in artificial insemination, *Trans. West. Section A.U.A.*, Aug. 1954.
4. Haman, J. O.: *Legal Aspects of Artificial Insemination*, *Progress in Gynecology*, Vol. III, 1957, Grune and Stratton, New York.
5. Kleegman, Sophia J.: Therapeutic donor insemination, *Proc. First World Congress on Fert. and Steril.*, May 1953.
6. Mall, F. P.: On the frequency of localized anomalies in human embryos and infants at birth, *Am. J. Anat.*, 22:49, 1917.
7. Malpas, P.: A study of abortion sequences, *J. Obst. & Gyn. Brit. Emp.*, 45:932, 1938.
8. Whitehouse, B.: Discussion on the causes of early abortion and sterility, Joint Discussion No. 1, *Proc. Roy. Soc. Med.*, 23:248, 1929-30.
9. Whitelaw, M. J.: Use of the cervical cap to increase fertility in cases of ologozoospermia, *Fert. & Steril.*, 1:33-39, 1950.

